

SECTION 1414

PRESSURE REGULATING VALVE

1414.0100 GENERAL

1414.0101 Description of Work. The work under this Section shall consist of furnishing all labor, materials, and equipment required for the installation of pressure regulating valves with check features in accordance with the details shown on the plans and requirements of these specifications.

1414.0103 Submittals. In order to be accepted for incorporation into the work, the manufacturer's make and model of pressure regulating valve shall appear on the list of approved products found in the Approved Materials List (Appendix A). Pressure regulating valves 3 inch and larger shall be approved by the engineer, or shown on the plans or specifications.

1414.0104 Delivery, Storage, and Handling. Pressure regulating valves shall be delivered to the site, stored, and handled in accordance with the manufacturer's instructions except as modified by the plans, special specifications, or as directed by the Engineer.

1414.0200 PRODUCTS

1414.0201 Materials.

(A) Pressure Rating. Pressure regulating valves shall have a working pressure rating of 250 pounds per square inch. The pressure setting adjustment range shall be from 30 to 300 pounds per square inch. Pressure regulating valves for service conditions exceeding these pressures shall be as specified in the plans or special specifications. Individual services line ratings will be covered on the plans.

(B) Component Parts.

(1) General. The main body and cover shall be either ductile iron in accordance with ASTM A536, or stainless steel (type 304 or 316). Flanges shall be 150 pounds.

The main valve trim shall be type 304 or 316 stainless steel in accordance with ASTM A167, ASTM A240, or ASTM A276. The pilot control shall be cast bronze in accordance with ASTM B62, with type 303 stainless steel trim.

Pressure regulating valves shall be hydraulically operated, diaphragm-type globe valves with pilot control system and a pressure setting adjustment feature.

Pressure setting adjustment shall be accomplished with a single adjusting screw. The adjustment screw shall be protected by a screw-type housing that can be sealed to discourage tampering.

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Pressure regulating valves shall be capable of holding downstream pressure constant with a fluctuating inlet pressure.

The main valve and pilot valve closure shall be drip tight when downstream pressures exceed the control pilot's pressure setting.

The main valve and pilot control system construction shall not include pistons or external packing glands.

The main valve shall have a single removable seat and a resilient disc.

The stem shall be guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat.

The pilot control shall be a direct-acting, adjustable, spring-loaded, normally open diaphragm valve, designed to permit flow when controlled pressure is less than the spring setting. The control system shall include a fixed orifice.

The pressure regulating valve shall have a check feature that—if a pressure reversal occurs—will close the valve to prevent return flow.

(2) External Coating. All exterior ferrous surfaces shall be factory coated in accordance with AWWA C550 or with an FDA-approved fusion bonded epoxy. Minimum total dry film thickness of this coat shall be no less than 12 millimeters. Surface preparation shall be in accordance with SSPC-SP 10 for near white blast cleaning prior to prime coat application. Nuts and bolts may be stainless steel conforming to ASTM type 304 or 316.

1414.0300 EXECUTION

1414.0301 General. Pressure regulating valves shall be installed in a horizontal position as indicated on the plans or as specified in the special specifications.

1414.0302 Installation.

(A) General. Valves shall be installed in accordance with the manufacturer's recommendation.

(B) Pressure Regulating Valves. Pressure regulating valves shall be installed above grade.

(C) Installation. Installation of pressure regulating valves under this Section shall include the installation of 2 pressure gauges.

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(D) Workmanship. All the Contractor's or subcontractor's personnel shall be skilled and knowledgeable regarding installation procedures for the valves and appurtenances being installed.

(E) Testing. All valves shall be hydrostatically leak tested per TW Section 1431.